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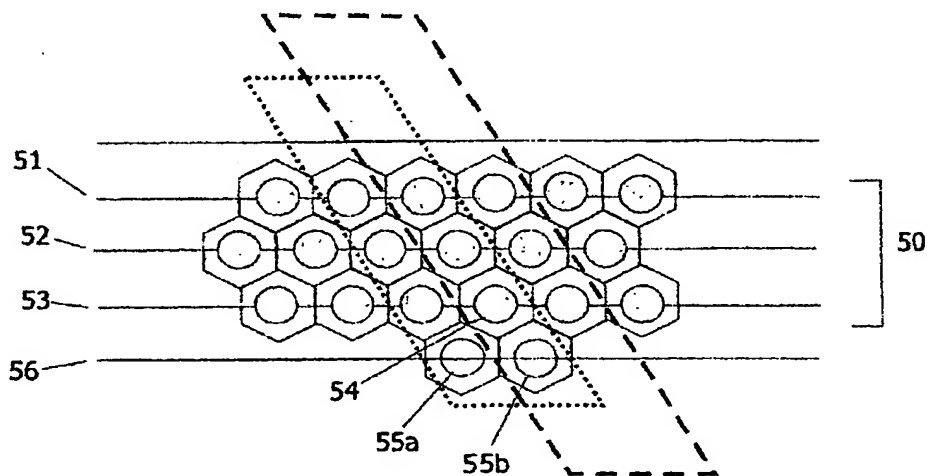
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(54) Title: ITERATIVE STRIPEWISE TRELLIS-BASED SYMBOL DETECTION METHOD AND DEVICE FOR MULTI-DI-  
MENSIONAL RECORDING SYSTEMS



(57) Abstract: When processing a two dimensional data area it is known to be advantageous to divide the two dimensional area into stripes and process each stripe using a stripe-wise detector. The stripe being processed shifts row per row downwards. Each stripe has as its output the bit-decisions of the top bit-row of the stripe which is the most reliable. That output bit-row is also used as side-information for the bit detection of the next stripe which is the stripe which is shifted one bit-row downwards. The bit-row just across the bottom of the stripe on the other hand still needs to be determined in the current iteration, so only the initialisation bit-values can be used in the first iteration of the stripe-wise bit-detector. In order to prevent the propagation of errors towards the top bit row of the stripe the relative weight for the bottom branch bit in the figure-of-merit is reduced from the full 100% to a lower fraction.



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## INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER  
 IPC 7 G11B20/00 H03M13/25

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## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EP0-Internal

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	<p>WEEKS W: "Full-Surface Data Storage"            2000, THESIS SUBMITTED IN PARTIAL            FULFILLMENT OF THE REQUIREMENTS FOR THE            DEGREE OF DOCTOR OF PHILOSOPHY IN            ELECTRICAL ENGINEERING IN THE GRADUATE            COLLEGE OF THE UNIVERSITY OF ILLINOIS AT            URBANA- CHAMPAIGN, XX, XX, PAGE(S)            COMPLETE , XP002227664            page 27, line 5 - line 15            page 76            page 79 - page 80            page 98 - page 99</p> <p style="text-align: center;">-----            -/--</p>	1-25

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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Y	J. W. WOODS, C. H. RADEWAN: "Kalman filtering in two dimensions" IEEE TRANSACTION ON INFORMATION THEORY, 'Online! vol. 23, no. 4, June 1977 (1977-06), pages 473-482, XP002303497 Retrieved from the Internet: URL: <a href="http://ieeexplore.ieee.org/iel5/18/22697/01055750.pdf?isNumber=22697&amp;prod=JNL&amp;arNumber=1055750&amp;arSt=+473&amp;ared=+482&amp;arAuthor=+Woods%2C+J.%3B++Radewan%2C+C.&gt;">http://ieeexplore.ieee.org/iel5/18/22697/01055750.pdf?isNumber=22697&amp;prod=JNL&amp;arNumber=1055750&amp;arSt=+473&amp;ared=+482&amp;arAuthor=+Woods%2C+J.%3B++Radewan%2C+C.&gt;</a> 'retrieved on 2004-11-01!	1-25
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